7. Octopusses (cont.)

Input

The first line will contain a single integer `n` that indicates the number of games to follow. For each game:

- the first line will contain a single integer that indicates the number of players in the game.
- the second line will contain the seed; a single `long` integer.
- the third line will contain 2 integers `t e`, where `t` is number of tentacles on the board and `e` is the number of elevators.
- Each of the next `t` lines will contain two integers `b s`, where `b` is the square where the tentacle begins and `s` is the square where the tentacle stops.
- Each of the next `e` lines will contain two integers `b s`, where `b` is the square where the elevator begins and `s` is the square where the elevator ends.

Output

For each game you print a single line which reads: `Player X wins after Y rolls!` Each player is given an uppercase character, with the first player being `A`, the second being `B`, etc. *`X`* is the character corresponding to the winning player and *`Y`* the number of rolls that happened during the game, including the winning roll and rolls needed to determine which path to take. If for example there are two players, and player A rolled 6 times and player B rolled 5, and player A's 6th roll won the game, then the string would read `Player A wins after 11 rolls!`

Example Input File

```
1
2
77583464
8 7
27 10
27 9
27 1
10 6
10 9
57 41
34 14
34 11
14 37
14 45
17 49
50 64
50 62
22 37
22 23
```

Example Output to Screen

```
Player B wins after 21 rolls!
```

Random numbers generated for given seed:

```
77583464
5 3 4 4 3 6 6 4 4 4 5 6 5 2 1 3 5 4 3 4 3
```